Claims

What is claimed is:

1. An isolated polypeptide having viral activity comprising a polypeptide sequence selected from the group consisting of:
   (a) the polypeptide sequence of Figure 11 (cW985);
   (b) biologically active modifications of (a); and
   (c) biologically active fragments of (a).

2. The isolated polypeptide of claim 1 wherein said polypeptide sequence is the polypeptide sequence of Figure 11 (cW985).

3. The isolated polypeptide consisting essentially of the polypeptide sequence of Figure 11 (cW985).

4. The isolated polypeptide of claim 3 wherein said isolated polypeptide comprises the polypeptide sequence of Figure 11 (cW985) except for one or more conservative amino acid substitutions.

5. The isolated polypeptide consisting of the polypeptide sequence of Figure 11 (cW985).

6. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a sequence at least 99% identical to the polypeptide sequence of Figure 11 (cW985).

7. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a sequence at least 95% identical to the polypeptide sequence of Figure 11 (cW985).

8. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a sequence at least 90% identical to the polypeptide sequence of Figure 11 (cW985).

9. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a sequence at least 85% identical to the polypeptide sequence of Figure 11 (cW985).

10. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a sequence at least 80% identical to the polypeptide sequence of Figure 11 (cW985).

11. The isolated polypeptide of claim 1 wherein said isolated polypeptide comprises a biologically active fragment of the polypeptide sequence of Figure 11 (cW985) that displays viral activity.

12. The isolated polypeptide of claim 1 wherein said isolated polypeptide is a closely related analog of the polypeptide sequence of Figure 11 (cW985), wherein said analog displays viral activity.

13. The isolated polypeptide of claim 1 wherein said isolated polypeptide is an antigenic analog of the polypeptide sequence of Figure 11 (cW985), wherein said analog binds to an antibody specific for the polypeptide of Figure 11 (cW985).

14. The isolated polypeptide of claim 1 wherein said isolated polypeptide is an N-terminal fragment of the polypeptide of Figure 11 (cW985).

15. The isolated polypeptide of claim 14 wherein said N-terminal fragment comprises at least 10 amino acids of the polypeptide of Figure 11 (cW985).

16. The isolated polypeptide of claim 1 wherein said isolated polypeptide is a C-terminal fragment of the polypeptide of Figure 11 (cW985).

17. The isolated polypeptide of claim 16 wherein said C-terminal fragment comprises at least 10 amino acids of the polypeptide of Figure 11 (cW985).

18. The polypeptide of claim 1 wherein said polypeptide is fused to heterologous sequence.

19. The polypeptide of claim 18 wherein said heterologous sequence is a scaffold.

20. The polypeptide of claim 19 wherein said scaffold is a fluorescent protein.

21. The polypeptide of claim 1 wherein said polypeptide is chemically modified.

22. The polypeptide of claim 21 wherein said polypeptide is radio labeled.

23. The polypeptide of claim 21 wherein said modification is selected from the group consisting of acetylation, glycosylation, or fluorescent tagging.

24. The isolated polypeptide of claim 1 wherein said polypeptide is chemically synthesized.

25. An isolated polynucleotide encoding a polypeptide of claim 1.

26. An isolated polynucleotide encoding a polypeptide of claim 1 wherein said polypeptide encodes the polypeptide sequence of Figure 11 (cW985).

27. An isolated polynucleotide encoding a polypeptide of claim 3.

28. An isolated polynucleotide encoding a polypeptide of claim 4.

29. An isolated polynucleotide encoding a polypeptide of claim 5.

30. An isolated polynucleotide encoding a polypeptide of claim 6.

31. An isolated polynucleotide encoding a polypeptide of claim 7.

32. An isolated polynucleotide encoding a polypeptide of claim 8.

33. An isolated polynucleotide encoding a polypeptide of claim 9.

34. An isolated polynucleotide encoding a polypeptide of claim 10.

35. An isolated polynucleotide encoding a polypeptide of claim 14.

36. An isolated polynucleotide encoding a polypeptide of claim 16.

37. An isolated polynucleotide comprising the DNA sequence of Figure 11 (cW985).

38. An isolated polynucleotide consisting essentially of the DNA sequence of Figure 11 (cW985).

39. An isolated polynucleotide consisting of the DNA sequence of Figure 11 (cW985).

40. The isolated polynucleotide of claim 37 wherein said isolated polynucleotide comprises a sequence at least 99% identical to said polynucleotide.

41. The isolated polynucleotide of claim 37 wherein said isolated polynucleotide comprises a sequence at least 95% identical to said polynucleotide.

42. The isolated polynucleotide of claim 37 wherein said isolated polynucleotide comprises a sequence at least 90% identical to said polynucleotide.

43. The isolated polynucleotide of claim 37 wherein said isolated polynucleotide comprises a sequence at least 85% identical to said polynucleotide.

44. The isolated polynucleotide of claim 37 wherein said isolated polynucleotide comprises a sequence at least 80% identical to said polynucleotide.

45. A vector comprising the polynucleotide of any one of claims 25, 26, 38 or 39.

46. The vector of claim 45, wherein said vector provides inducible expression.

47. A gene therapy vector comprising the polynucleotide of claims 25, 26, 38 or 39.

48. A host cell comprising the vector of claim 45.

49. A polynucleotide that hybridizes under stringent conditions to the polynucleotide of any one of claims 25, 26, 38 or 39.

50. A method for producing a polypeptide having viral activity comprising culturing a population of host cells of claim 48 under conditions suitable for the expression of an encoded polypeptide and recovering expressed polypeptide from the host cell culture.

51. A composition comprising the polypeptide of claims 1, 2, 3 or 5 in a pharmaceutically acceptable carrier.

52. An antibody to the polypeptide of claims 1, 2, 3 or 5.

53. A method of identifying a cellular target that interacts with a polypeptide having viral activity, comprising the steps of exposing a polypeptide of claim 1 to putative target molecules and identifying a polypeptide/target interaction pair.

54. The method of claim 53 wherein said method is a yeast two-hybrid assay.

55. A method of screening for putative viral related therapeutics, comprising the steps of:

a) exposing a polypeptide/target interaction pair obtained by the method of claim 53 to a plurality of agents; and

b) recovering a subpopulation of disrupting agents which competitively displace said polypeptide from said target; wherein said disrupting agents are putative viral related therapeutics.

56. The method of claim 55, wherein said plurality of agents is a combinatorial chemical library.

57. A method of treating a viral related condition, comprising the step of administering a therapeutically effective amount of the polypeptide of claim 1, or a pharmaceutically acceptable salt thereof.